

# Portugal Market Report 2018

## Index

1	Socio-economic situation, general overview .....	2
2	Policy measures impacting forest management and forest products trade .....	5
2.1	Climate change and carbon .....	5
2.2	Energy .....	8
2.3	Desertification.....	8
2.4	Forests.....	9
2.5	Timber and timber products markets.....	9
3	Market drivers (wood energy certified products).....	9
4	Development in forest product markets.....	12
4.1	Wood production and markets.....	12
4.2	Sawn wood.....	14
4.3	Veneer sheets and wood base panels .....	14
4.4	Wood pulp, paper and paper board .....	15
4.5	Biomass for energy .....	15
	References .....	17
	Annex.....	18

## 1. Socio-economic situation, general overview

In Portugal, the current millennium can be divided into two cycles in terms of economic buoyancy: from 2000 to 2013 a long period of stagnation, comprising recessions in 2003, 2009, and 2011-2013; in 2014 the recessive cycle was reversed, with the moderate growth of 0.9%. The slight recovery of 2014 was consolidated in 2015, 2016 and 2017, these years GDP grew, respectively, at a rate of 1.8%, 1.5% and 2.7% (Statistics Portugal, 2017 & 2018).

The aggregate demand shows contrary developments:

- in 2012, a stronger contraction of domestic demand and an improvement in net external demand, which reached a positive historical value;
- In 2013 the behaviour of net external demand combined with the lower contraction of domestic demand contributed to an easing of the fall in GDP of approximately 2% in comparison to 2012;
- In 2014, the expansion of domestic demand (2.2%) countered the contraction observed since 2011, but there was a decline in net external demand, which resumed a negative value (-1.4%);
- In 2015, the stronger expansion of domestic demand (2.5%) combined with the behaviour of net external demand (-1.1%), which declined less than in the previous year, contributed to an acceleration in the GDP growth rate;
- In 2016, the increase of domestic demand was weaker (1.6%), joined with a less negative behaviour of net external demand, led to a slight deceleration in the GDP growth rate

In conclusion, the period of 2010-2017 can be divided into two cycles:

- The recession (2011-2013) associated with a modest recovery of the economy after the 2008-2009 crises, with the recessive nature determined by the impact of the restrictive policy applied to the Portuguese economy;
- The reversal of the recessive cycle from 2014 onwards.

Price growth, assessed by the rate of change in the Consumer Price Index (CPI), stood at 0.4% in 2013, continuing to decelerate from the two previous years. In 2014, CPI rate has fallen below 0% to -0.41% (deflation), being the reversal year. In 2015 and 2016 CPI rise steadily, at 0.5% and 0.6%, respectively. In 2017, CPI increased more sharply at a rate superior to one (1,4%).

Since 2009, the average rate of change in Gross Fixed Capital Formation (GFCF) was negative (-4.1%). Thought, in 2011 (-12.1%) and 2012 (-17.8%) the decay was bigger. In 2013 gross capital formation declined less sharply than in 2012, at the rate of -5.8%. From 2014 onwards GFCF shows positive rates of change, respectively 3.5% (2014),

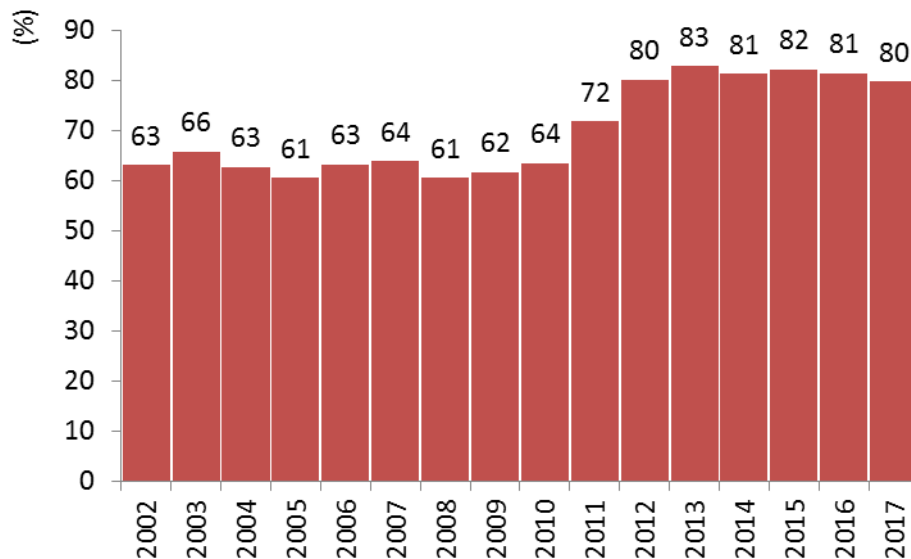
5.5% (2015) and 0.9% (2016). In 2017 GFCF increased 9%, the highest rate in the last 19 years.

In gross fixed capital formation, construction, comprising investment by households and enterprises, resumed the downward trend observed since 2002, only countered by the reversal of the trend in 2015. Traditionally, this sector is an important end use within the Portuguese wood and wood products.

In 2017 the import-export coverage rate (80%) declined from the previous year (81%). However, the 2017 value was still relatively high and had been reached in 2013 after three consecutive years of increase, allowing this rate to go up from 61.7% in 2009 to 83.0% that year (figure 1). In 2017 nominal exports accelerated 10%, much higher than the previous year increase (0.8%), which represented already a significant increase in volume.

In 2017 the rate of change in exports was smaller than in imports (10% against 12%). In the present decade (2010 onwards), in 2014, 2016 and 2017 the imports grew more than exports. The other five years exports grew more than imports, countering the traditional deficit within the Portuguese external trade balance (Statistics Portugal, 2018).

Figure 1 - National export/import coverage rate (Statistics Portugal, 2018).



In 2017 the degree of openness of the Portuguese economy, as measured by the ratio of the sum of exports and imports of goods to GDP at current prices, was 64.3%, growing by 4.2% from the previous year. The upward trend followed the 2015 (-0.7%) and 2016 (-1.1) short decline, after successive increases between 2010 and 2014. Developments in this indicator have been conditioned by the overall economic pace, and there was a noticeable direct relationship between the business cycle and the

openness of the economy. In the long run, the pattern shows the trend towards the increase in the degree of openness to external trade: in 1995 this indicator stood at 49.0%, compared to 64.3% in 2017.

The Portuguese trade flows are dominated by European Union countries both in destination (74.1%) and in origin (76.2%) of goods. Spain is the leading country on international trade flows, with 25.2% in exports and 32.0% in imports; France and Germany are in second place, with, respectively, 12.5% and 11.4%, in exports, and 7.4% and 13.7%, in imports. Nevertheless, the time series analyses of the weights of these flows show a downward trend, reflecting a change towards the diversification of trading partners.

The flows with the Portuguese-speaking African countries (PALOP African countries) are residual, representing 4.3% of the exports and 0.5% of the imports. Angola had the highest weight within these countries, being the destination of 75.0% of the goods exports and the origin of 82.9% of the imports in the group.

In 2017, the downward trend of resident population which started in 2010 was maintained. The population was estimated at 10.291.027 persons, 245.360 fewer than in 2009, when it reached a peak.

Compared with 2016, in 2017 the resident population crude rate was negative (-0.18%). Though, the fall was less marked than in the previous years (-0.57%, in 2013, -0.50%, in 2014, -0.32%, in 2015, and -0.31%, in 2016). The upward trend is mostly due to the shift of the migration rates to moderate declines, pulled, in 2017, to a positive value (0.05%).

Still, the 2017 resident population negative crude rate is justified with the negative natural growth rates (-0.23%, in 2017), which resume the steady negative trend of the decade (-0.23%, in 2013 and 2016; -0.22%, in 2014 and 2015; and -0.17%, in 2012).

Another significant aspect on population profile is the weight of the elderly, which is following an upward tendency, as a consequence of a decline in fertility and an increase in longevity. As of 1990 the ratio of the number of elderly persons of an age when they are generally economically inactive, aged 65 and over, to the number of young persons, from 0 to 14, (ageing index) showed a recurrent growth trend (72.1%, in 1990, and 155.4%, in 2017).

These population trends were developed in a context of changes in social behaviour, as shown by a number of indicators: the age of the mother at the birth of the first child increased by 5.6 years since 1990, and stood at 30.3 in 2017; the share of births outside marriage rose; the average age of women and men at first marriage has increased on a recurrent basis since 1990; the number of marriages tended to decline, especially from 2000 onwards; the number of divorces followed an opposite trend of weddings up to 2010, when it reached a peak, verifying, afterwards, a slight decline (22.304, in 2017).

The foreign population with a legal resident status, showing systematic increases since 1990, reversed the trend in 2010, experiencing a fall of 11.8%. The downward trend

continued up to 2015. In 2016, after six years of consecutive decreases, foreign population rise 2.4% compared to previous year. The main foreign population' issuing countries were Brazil, Cabo Verde, Ukraine and Romania.

In 2017 the unemployment rate stood at 8.9%, attaining the symbolic one number digit after several consecutive years of two digits rates. These were reached for the first time in 2010, and the upward pattern was only reversed in 2013, when the highest unemployment rate was reached in Portugal (16.5%).

In 2017 the percentage of the labour force aged 45 and over vis-à-vis the total labour force (excluding those aged less than 15) increased by 1.1% compared to the previous year, reaching 47%. The upward pattern has been registered since 1998.

Labour force's educational attainment continued to follow the increasing trend observed since 1998, with the share of those in active age who completed secondary education rising from 23.5%, in 1998, to 56.3%, in 2016 (Pordata, 2016 & 2018).

Final synthesis:

The Portuguese socio-economic macro trends from 2010 to 2013 highlight the positive improvement of the balance sheets and of the openness of the economy, which are associated with the strong slowdown in imports, given the fall in domestic demand, the maintenance of high export growth, and the drop in GDP. The good performance of the exports hasn't been enough to counter the stagnation or even, in some recent years, the recession of the economy. The negative conditions are also reflected on investments with the strong shut down on gross capital formation.

The reversal of the recessive cycle (2014 onwards) is reflected by 2016 macro-economic figures, mainly by the GDP and GFCF upward performance. As well the unemployment rate downgrade shift to less than 10% in 2017 corroborates the economic recovery pattern.

The population profile is marked by growth rates inferior to one and the increase of the elderly. This profile has recessive implications on the short run and on the long-term concerning implications, namely, on labour force's sustainability.

## **2. Policy measures impacting forest management and forest products trade**

### **2.1. Climate change and carbon**

In Portugal the Strategic Framework for Climate Policy (QEPiC) was approved by the Government Order n.º 56/2015. The QEPiC aims are:

- Promote the transition for a low-carbon based economy, creating more wealth and employment. and enhancing green economy through the Commitment to a Green Economy (CCV);
- Ensure sustained reduction on the emissions of greenhouse gases (GHG), in order to comply with the targets of -18% to -23%, in 2020, and -30% to 40%, in

2030, in relation to 2005 levels, resulting of mitigation measures, namely through the increase of new technologies, energetic efficiency (in 2030 minus 30% in reference to de energetic baseline) and renewable energy sources (in 2030 at least 40% of the energy final consumption);

- Reinforce resilience and the national capacity towards adaptation;
- Ensure a committed participation on international negotiations and cooperation, complying with international commitments and support developing countries in de domains of mitigation and adaptation to climate changes;
- Promote research, innovation and the increase of knowledge;
- Promote social involvement on climate change challenges, enhancing the rise of individual and political actions;
- Improve the efficacy of the information systems, of the reports and of monitoring;
- Ensure the conditions to financial support and increase investment levels, namely by the efficient allocation of the subventions under the Portuguese Carbon Fund (FPC) ;
- Ensure governance and the incorporation of climate aims on sector domains as foreseen, namely, by the National Plan for Climate Change (PNAC 2020/2030) and the National Strategy for Adaptation to Climate Change (ENAAC 2020).

QEPiC establishes an integrated framework of instruments identifying the policy options to comply with the aims of the Commitment to a Green Economy (CCV). This framework considers both the adaptation to and the mitigation of climate change, through the National Plan for Climate Change (PNAC 2020/2030) and the (second phase of the) National Strategy for Adaptation to Climate Change (ENAAC 2020. In 2016, it was created the National System for Policies and Measures (SPeM) and a governance structure named Air and Climate Change Interministerial Commission (CIAAC) were also established.

PNAC 2020/2030 and ENAAC 2020 follow a dynamic approach giving the sectors the opportunity to identify sectorial policies and measures in order to comply with climate policies established by QEPiC.

In particular, PNAC 2020/2030, quantifies the necessary effort to mitigate emissions so as to comply with Portugal's commitments both international and at the EU level, identifying sectorial responsibilities. In the case of forests, the PNAC 2015 didn't include quantified targets for the LULUCF sector, as this can only be possible once the EU has finalized the approval of the accounting rules under the climate package.

The first phase of the National Strategy for Adaptation to Climate Change (ENAAC 2020) was adopted by the Portuguese Government on April 2010 (Government Order

n.º 24/2010, April 1<sup>st</sup>). This Strategy is structured around four objectives: Information and knowledge; Reducing vulnerability and increasing the response capacity; Participation, awareness raising and dissemination; International cooperation. The Strategy identifies nine priority sectors, which are connected to nine sectorial working groups. On the priorities, forest and forest sector measures and objectives are such as:

- Promote forest sector resilience through management practices;
- Reduce forest space vulnerability to biotic and abiotic risks;
- Ensure the sustainability of direct and indirect productions and services;
- Increase the knowledge about potential impacts and capacity to apply effective adaptation measures;
- Promote exchange of knowledge between science and forest practice;
- Monitoring of ecosystems reaction to climate change;
- Monitoring the adequacy of policies, plans and instruments.

In summary: the new generation of climate change policy instruments is based on the new PNAC 2020/2030 revised targets and articulated measures, in terms of GHG emissions mitigation. The sector integration perspective with the implementation of concrete measures is advocated on the second phase of ENAAC 2020.

The Portuguese “Commitment to a Green Economy” (CCV) establishes a strategic plan for a sustainable future, where economic growth goes hand in hand with responsible environmental behavior, thus contributing to social justice and quality of life of today's populations and of future generations. The Commitment to Green Economy is established through 13 goals and 83 measures.

The CCV includes 10 initiatives for the agricultural and forestry sector:

- AGF 1: Promoting environmental measures and streamline grant award procedures;
- AGF 2: To support agricultural and forestry activities in areas classified under the Birds and Habitats Directives through the Natura payment;
- AGF 3: To support investments in agriculture to promote higher levels of sustainability in the use of resources.
- AGF 4: To support holdings comply with the rules of green Payment (Greening) environmental component of direct payments from the first pillar of PAC (2014-2020)
- AGF 5: To promote the certification of sustainable forest management by supporting the adaptation of farms and enterprises to environmental requirements, safety and risk prevention
- AGF 6: To support holdings which meet Good Agricultural and Environment Conditions (BCAA

- AGF 7: Support the development and structuring of new products agroforestry sector, ensuring greater value added environmental;
- AGF 8: Improving forest management and productivity of forest stands;
- AGF 9: Increase the contribution of hunting, fishing, forestry and grazing, beekeeping, production of mushrooms and other non-wood products;
- AGF 10: Promote the use of forest products with a low carbon footprint (ex .: Green building)

## **2.2. Energy**

The Portuguese legal framework on energy reflects the EU strategy and targets. The National Energy Strategy (NES2020), Government Order n.º 29/2010, from 15 of April of 2010, contains aims related with forest biomass for energy.

On the scope of the NES, the National Renewable Energies Action Plan (NREAP 2020) and the National Energy Efficiency Action Plan (NEEAP 2016) are additional planning instruments that establish the national targets to achieve the aims of international commitments related to renewable energies and energy efficiency,

In 2016, 55.5% of the electricity produced in Portugal was based in renewable energies. These energies' contribution to the total consumption of energy was 26.3%, rising 3.1% compared to the previous year. At European level, Portugal has one of the best rates on the accomplishment of the targets related to the incorporation of renewable energies in the gross consumption of energy.

## **2.3. Desertification**

The National Action Program to Combat Desertification (PANCD), approved in 2014 (Government order n.º 78/2014, of 24 of December), follows international agreements in the framework of the United Nations Convention to Combat Desertification (UNCCD). The first strategic objective of the PANCD concerning soil and water conservation is a consequence of UNCCD commitments. The map of susceptibility to desertification for mainland Portugal was drawn in the framework of this Program.



## **2.4. Forests**

The European commitments for forest policies are incorporated in the Portuguese National Forest Strategy (NFS), which was updated in 2015 (Government Order n.º 6-B/2015, of 4 of February). The NFS assumes the maximization of the total economic value of forest as its main purpose, and it's organized in the following strategic objectives

- minimization of risks affecting forests (biotic and abiotic);
- specialization of the territory;
- enhancement of forest productivity through sustainable forest management;
- internationalization of forest sector and increase value of forest products;
- enhancing the sector's efficiency and competitiveness.

New legislation was introduced in 2017 - a "Forest reform" that impacts mainly the afforestation and reforestation processes, but also provides an additional impetus on land registration and mapping. In addition, the regional forest management plans for the whole continent are under revision and are expected to be in force by the end of 2018.

## **2.5. Timber and timber products markets**

The Timber Regulation (Reg. EU 995/2010) to combat trade of illegally harvested timber was adopted in October 2010 by the EU. This regulation has key obligations:

- It prohibits the placing on the EU market of illegally harvested timber and products derived from such timber;
- It requires traders who place timber products on the EU market for the first time to exercise 'due diligence'.

The legislation to apply the timber regulation in Portugal establishes, in addition, a mandatory register for all the operators with activity in the country, which is made electronically in a platform managed by the EUTR competent authority (ICNF). The registration of the operators has proven to be a good instrument to verify the application in Portugal of the obligations laid down by the timber regulation, as it allows the competent authority to identify the operators working in Portugal and to plan the monitoring actions to verify compliance with EUTR.

## **3. Market drivers (wood energy certified products)**

The Portuguese forest sector has long been export oriented. Forest products exports have been among the country's main exports, accounting in the current millennium for

10% of the total exports, while the sector is only responsible for 4% of the imports (figure 2). After 2012 the exports surpass the imports in more than 2.3 thousands million euros (table 1), making it one of the most international markets dependent sector of the Portuguese economy.

Portugal is a price-taker in international markets. The fact that a large share of forest production is exported and that Portugal is primarily a price taker makes it very vulnerable to market developments elsewhere (Rego et al, 2014).

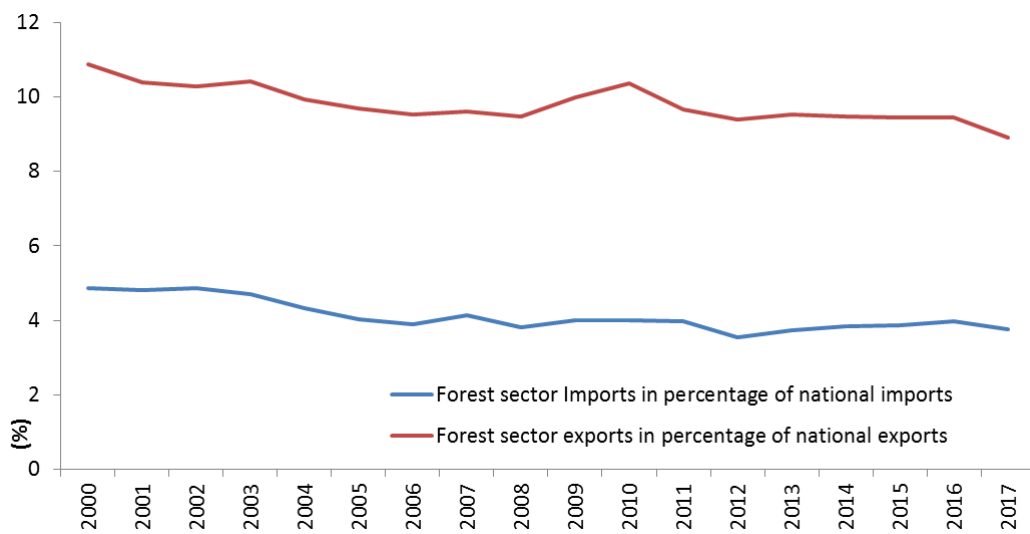


Figure 2 – The forest sector exports & imports in percentage of the Portuguese exports & imports (Statistics Portugal 2018)

Table 1 - National and forest sector commercial balance (Statistics Portugal, 2018)

Year	Commercial balance (million €)		Coverage rate of exports over imports (%)	
	Forest sector	National	Forest sector	National
2000	733	-18.491	133	60
2001	662	-18.701	130	60
2002	742	-16.619	134	63
2003	953	-15.181	146	66
2004	939	-18.340	144	63
2005	940	-20.242	145	61
2006	1.199	-20.654	155	63
2007	1.191	-21.632	148	64
2008	1.232	-25.347	150	61
2009	1.107	-19.682	154	62
2010	1.509	-21.379	164	64
2011	1.764	-16.723	174	72
2012	2.250	-11.161	213	80
2013	2.375	-9.710	212	83
2014	2.285	-10.978	201	81
2015	2.355	-10.711	201	82
2016	2.279	-11.385	193	81
2017	2.310	-13.866	189	80

The exceptions to export oriented markets are the end uses of wood products within the construction and the wrapping and packaging sectors. Historic data show that these wood products have the domestic consumption in Portugal as its major destination.

Since 2000, domestic markets represented, on average, 76% of the consumption in builder's joinery and carpentry of wood and 72 % in wooden wrapping and packaging (Table 2). Beginning in 2011, vis-a-vis with the Portuguese financial crisis, the domestic consumption of both these products has drop, (-17%), reflecting the consequences of construction contraction and the overall economic activity decay.

The market trends of wooden wrapping and packaging materials show also decay in 2012 and 2013. Thought, after 2013 the trend of domestic consumption is changing to the pre-crisis levels, with the domestic consumption of 2016 exceeding in 12% the value of 2013. The pattern of wood packaging materials sales reflects the augmentation of domestic demand resulting from the recovering of previous economic difficulties, the increase of activity entails higher consumption of packaging and wrapping materials.

Table 2 – Patterns of domestic consumption and exports of the end products of wood construction and packaging materials (Statistics Portugal 2018)

		(% of total sales)									2000 to 2016*
		2000	2010	2011	2012	2013	2014	2015	2016		
Builder's joinery and carpentry of wood	Domestic Consumption	89	77	76	72	66	61	61	60	76	
	Exports	11	23	24	28	34	39	39	40	22	
Wooden wrapping and packaging	Domestic Consumption	71	77	73	70	62	68	72	75	72	
	Exports	29	23	27	30	38	32	28	25	28	

\* annual average since 2000

The export orientation of Portuguese forest sector is the dominant factor on the option for certification schemes. Presently two systems are followed:

- The Programme for the Endorsement of Forest Certification (PEFC) with 254 604 ha of certified area, 853 forest producers, 136 Chain of Custody's certificates and 347 sites (PEFC Portugal, 2018).
- The Forest Stewardship Council (FSC) with 369.486 ha of certified area, corresponding to 23 certificates of forest management, more than 230 forest owners and 214 certificates of the Chain of Custody (FSC Portugal, 2018).

#### 4. Development in forest product markets

##### 4.1. Wood production and markets

In the current millennium the production, in value, of coniferous timber for industrial uses has been decreasing at concerning rates (average annual variation -3%) (table 3). Even so, in the current decade (2010 to 2016) a positive change of 4% was observed. The non-coniferous roundwood shows an opposite evolution with increase at an annual average rate of 4%.

The evolution in cubic meters unities of volume from 2000 to 2017 (as reported to the Joint Forest Sector Questionnaires (JFSQ)), follows, as well, in the production of coniferous timber for industrial uses a decrease pattern with average annual rates of -2% (total variation -27%); whilst the non-coniferous timber has been rising on average 4% (total variation 67%). In the present decade (2010 to 2017) both these types augmented, though the average increase in non-coniferous was more intense, with the average annual change of 8% (total 57%), whereas in coniferous was 1% (total 5%).

The investments made on production capacity by forest industries, namely within the pulp, paper and paperboard chain, upgraded raw material demand.

As well, the cluster of forest biomass for energy, presently associated with the policies on climate change mitigation and reduction of global greenhouse gases, represents an additional demand on wood raw material supply.

At European level, the timber deficit context is corroborated by the Indufor study's forecast horizon for 2016 (European Commission, 2013) which states that "...the EU will face a shortfall from EU sources of 63 Mm<sup>3</sup> of RWE<sup>1</sup> per annum in trying to meet the EU renewable energy targets, as shown by the NREAPs (National Renewable Energy Plans). In this context, the NFS (National Forest Strategy) assumes clearly as its main policy strategy the minimization of fire risks and biotic agents and the enhancement of productivity

These evidences reinforce the uncertainties associated with domestic markets to fully satisfy the supply of raw-material to wood based industries. On the long run, the high risks related to wildfires and pest and diseases are a threat to the production of roundwood at national level.

In 2017 wildfires had an extreme impact in Portugal, with a total burnt area in forest and other wooded land of 442.418 hectares, comprising 264.951 hectares in forest and 177.467 hectares in shrubland. In 2018, up to 15 of August, the total burnt area is much smaller: 34.781 hectares, distributed amongst 19.377 hectares of forest, 13.433 hectares of shrubland; and 1.981 hectares of agriculture, mainly in the southern region (ICNF, 2018),

The quality of burnt wood is depreciated or even unappropriated for industrial uses. Though, a part of the burnt wood can be used by wood base chains. On the short run, this evidence changes the patterns of the markets but will also have an important impact in the long run: it must be pointed out that fires in October 2017 affected large areas of maritime pine owned by the State that were one of the major suppliers to saw industry.

In general, the prospects for 2018 and 2019 assume markets' changes resulting from the extra supply caused by wildfires incidence. In general, the assumptions follow the raw material (timber) decrease on the imports and the increase within the production and exports.

In tropical timber was assumed a "business as usual", both on imports and exports, deriving from restrictions on tropical wood markets related to the application the timber regulation (Reg. EU 995/2010) in Portugal.

---

<sup>1</sup> RWE = roundwood equivalent, i.e. how much wood raw material is needed for a given quantity of product.

Table 3 – Forest production structure between 2000 and 2016 (Statistics Portugal, 2018).

	2000	2010	2015	2016	rate of change (%)					
					2015/2016	2000/2016		2010/2016		
					annual	annual average	total	annual average	total	
	10 <sup>6</sup> euros									
Forestry output at basic prices	1.458	1.025	1.255	1.217	-3	-1	-17	3	19	
Forestry goods output	1.146	753	917	893	-3	-1	-22	3	19	
Timber	Coniferous timber for industrial uses	270	122	145	152	4	-3	-44	4	25
	Sawlogs and veneer logs	220	99	124	131	5	-3	-41	5	32
	Pulp wood (round & split)	42	17	15	15	-1	-4	-63	-2	-10
	Other wood	9	6	5	6	7	-2	-36	0	-1
	Non-coniferous timber for industrial uses	188,34	247,09	318,46	299,62	-6	4	59	4	21
	Sawlogs and veneer logs	3,16	4,67	5,03	4,47	-11	3	41	-1	-4
	Pulp wood (round & split)	182,47	240,8	311,36	293,26	-6	4	61	4	22
	Other wood	2,71	1,63	2,07	1,89	-9	-2	-30	3	16
	Fuel Wood	88,64	46,7	51,17	42,49	-17	-3	-52	-2	-9
	Standing Timber (change in inventories)	103	124	149	134	-10	2	29	1	7
Other forestry products	495	214	254	266	5	-3	-46	4	24	
Forestry Services Output	267	230	275	261	-5	0	-2	2	13	
Non-forestry Secondary Activities (inseparable)	45	41	62	63	0	3	40	9	52	

## 1. Sawn wood

The (still recent) Portuguese financial crises had particular effect on the construction activity, which showed a rough contraction. Traditionally this sector dominates the end use of sawn wood and carpentry products. Another important product of sawnwood industries is wood for wrapping and packaging, which is recovering to the pre-crisis levels (in 2016 the domestic consumption exceeded in 12% de value of 2013, see chapter 3).

The 2018 estimate for sawnwood from coniferous resume the increase of production, a slight rise on exports and the reduction of imports. On the short run, the prospect for sawlogs production augmentation triggered by the excess of burnt wood availability is an incentive to increase saw plants' productivity. In addition, the expected rise in the Portuguese' total exports induce bigger consumption of wood based wrapping materials. The 2019 forecast assumes the maintenance of 2018 business pattern.

In non-coniferous sawnwood was assumed the “business as usual” scenario. In tropical sawn the context imposed under the restrictions on tropical wood markets related to the application of the timber regulation (Reg. EU 995/2010) is expected to induce estimates (2018) and forecast (2019) resuming a falling pattern.

## 2. Veneer sheets and wood base panels

The significant characteristic of the overall Portuguese forest based industries embody its efficiency in the use as raw material of the wood residues, generated within the timber processing activities, and of recycled wood products. The reutilization is particularly relevant in wood panel industries. In these sense, these industries are linked to other wood based chains, namely to sawmill activities.

The wood panels production is dominated by plywood (more than 60%) followed by fibreboard (almost 40%), which consists almost exclusively on the production of MDF (medium density). In 2016 and 2017, plywood, as well as veneer sheets had a residual importance in the overall wood panels and timber based productions.

The great majority of panels' production (more than 90%) is exported to international markets.

Within the fibre and particle boards, the estimate for 2018 and the forecast for 2019 account the increase of production following the prospect of rise of raw material supply, resulting from sawn wood production increment.

The forecast for wood base panels based on tropical species (veneer and plywood) assumes a "business as usual" scenario in the context of application in Portugal of the timber regulation, imposing restrictions within tropical wood market products.

### **3. Wood pulp, paper and paper board**

The supply of domestic raw materials to pulp industries does not fulfil this chain industrial capacity needs. The whole satisfaction of these industries demand is yearly accomplished with raw material imports.

Thought, in 2018, the prospect of increase in the production of national pulpwood round and split (TF1) is prospected a chain linked rise of wood pulp production and exports, and the decrease of the imports. The forecast for 2019 considers a slight increase in production subsequent to investments in productivity efficiency within the industries.

In Portugal the production of paper and paperboard is essentially concentrated on printing and writing paper, packaging paper and paper board and household and sanitary papers. The prospects for 2018 are considered similar to the ones observed in previous years. The forecast for 2019 assumes a slight rise on production and exports resulting from investments on capacity.

### **4. Biomass for energy**

The industrial capacity to produce biomass for energy increased in recent years. The upward of this chain characterises is on table 4.

The estimates for 2018 and forecast for 2019, resume the increase of pellets' production and exports, mainly resulting from the higher production, and the "business as usual" scenario within the imports.

Table 4 - Industrial capacity of the chain of forest biomass for energy,

Type of plants	State 2018	Number	Capacity (MW)	Round wood consumption (tonnes/year)	Biomass consumption in 2015 (tonnes/year; 35% humidity)
Dedicated	Operating	9	93,5	-	1.208.084
	Approved	11	85,0	-	1.105.607
	Project	9	78,5	-	619.845
Cogeneration	Operating	8	47,3	-	715.910
Concrete	Operating	7	-	-	44.288
Pellets	Operating	6	-	840.000	126.000
	Construction	3	-	290.000	43.500



## References

European Commission, 2013, A blueprint for the EU forest-based industries, (woodworking, furniture, pulp & paper manufacturing and converting, printing), Brussels, Commission Staff Working Document SWD (2013) 343 final.

FAOSTAT, 2018, URL <http://www.fao.org/faostat/en/#home>.

FSC Portugal, 2018, URL <http://pt.fsc.org/fsc-portugal.299.htm>.

PEFC Portugal, 2018, URL <http://www.pefc.pt/certificacao-gfs/introducao>.

ICNF, 2018, Institute for Nature Conservation and Forests URL <http://www2.icnf.pt/portal/florestas/dfci/relat/rel-if>

Pordata, 2018, Pordata, Base de Dados Portugal Contemporâneo, Fundação Francisco Manuel dos Santos, URL <https://www.pordata.pt/>.

Pordata, 2016, Retrato de Portugal PORDATA, Edição 2016, Lisboa, Fundação Francisco Manuel dos Santos, URL <https://www.pordata.pt/>.

Statistics Portugal, 2018, Statistics on external trade of goods, Statistics Portugal, Industrial Production Statistics, Economic Accounts for Forestry, URL: [www.ine.pt](http://www.ine.pt).

Statistics Portugal, 2017, Statistical Yearbook of Portugal 2016; Lisboa, Instituto Nacional de Estatística, IP .

Rego, F., Constantino, L.; Louro, G., 2014, Forest Policies in a Changing International Context, Springer, World Forests 19, Forest Context and Policies in Portugal, Present and Future Challenges, pp 219-233

,

**Annex**
**Table 5 - TIMBER FORECAST QUESTIONNAIRE, roundwood**



 <b>TF1</b> <b>TIMBER FORECAST QUESTIONNAIRE</b> <b>Roundwood</b>		Country: Portugal		Date: September 2018			
		Name of Official responsible for reply: Graça Maria Louro					
<b>Official Address (in full):</b> Instituto da Conservação da Natureza e das Florestas, IP, Avenida da República, 16 1050-191 LISBOA – PORTUGAL		<b>Telephone:</b> (+351) 213 507 900					
		<b>E-mail:</b> Graca.Louro@icnf.pt					
		<b>Note:</b> Complete only if data for 2017 have been revised.					
Product Code	Product	Unit	Historical data 2016	Historical data 2017	Revised 2017	Estimate 2018	Forecast 2019
1.2.1.C	<b>SAWLOGS AND VENEER LOGS, CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	2.044 N	1.702	1.840	2.050	2.000
	Imports	1000 m <sup>3</sup> ub	152 #	116 #	164	100	110
	Exports	1000 m <sup>3</sup> ub	27 #	17 #	42	50	45
	Apparent consumption	1000 m <sup>3</sup> ub	2.168	1.801	1.962	2.100	2.065
1.2.1.NC	<b>SAWLOGS AND VENEER LOGS, NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	28 N	50 R	29	30	29
	Imports	1000 m <sup>3</sup> ub	64 #	17 #	126	60	70
	Exports	1000 m <sup>3</sup> ub	6 #	0 #	0	7	6
	Apparent consumption	1000 m <sup>3</sup> ub	86	67	155	83	93
1.2.1.NC.T	<b>of which, tropical logs</b>						
	Imports	1000 m <sup>3</sup> ub	24 #	24 #	23	20	22
	Exports	1000 m <sup>3</sup> ub	7 #	6 #	4	6	6
	Net Trade	1000 m <sup>3</sup> ub	17	18	18	14	16
1.2.2.C	<b>PULPWOOD (ROUND AND SPLIT), CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	1.714	1.861	1.861	1.900	1.870
	Imports	1000 m <sup>3</sup> ub	95 #	82 #	61	40	50
	Exports	1000 m <sup>3</sup> ub	27 #	70 #	232	240	235
	Apparent consumption	1000 m <sup>3</sup> ub	1.782	1.872	1.690	1.700	1.685
1.2.2.NC	<b>PULPWOOD (ROUND AND SPLIT), NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	7.921	8.454	8.454	8.500	8.450
	Imports	1000 m <sup>3</sup> ub	1.032 #	1.087 #	940	900	910
	Exports	1000 m <sup>3</sup> ub	161 #	186 #	181	200	190
	Apparent consumption	1000 m <sup>3</sup> ub	8.793	9.356	9.213	9.200	9.170
3	<b>WOOD CHIPS, PARTICLES AND RESIDUES</b>						
	Domestic supply	1000 m <sup>3</sup>	2.591 C	2.584 C	2.310	2.500	2.400
	Imports	1000 m <sup>3</sup>	1.649 C	1.872 C	1.721	1.600	1.650
	Exports	1000 m <sup>3</sup>	50 C	90 C	45	150	100
	Apparent consumption	1000 m <sup>3</sup>	4.190	4.365	3.985	3.950	3.950
1.2.3.C	<b>OTHER INDUSTRIAL ROUNDWOOD, CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	78 N	68 R	111	120	115
1.2.3.NC	<b>OTHER INDUSTRIAL ROUNDWOOD, NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	204 N	256 R	191	210	200
1.1.C	<b>WOOD FUEL, CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	207	169	169	200	180
1.1.NC	<b>WOOD FUEL, NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	885	878	878	900	880

Table 6 - TIMBER FORECAST QUESTIONNAIRE, forest products.

Product Code		Product	Unit	Historical data		Revised 2017	Estimate 2018	Forecast 2019
				2016	2017			
		 <b>TF2</b> <b>TIMBER FORECAST QUESTIONNAIRE</b> <b>Forest products</b>		Country: Portugal		Date: September 2018		
				Name of Official responsible for reply: Graça Maria Louro				
				Official Address (in full): Instituto da Conservação da Natureza e das Florestas, IP, Avenida				
				1650-191 LISBOA - PORTUGAL		Note: Complete only if data for 2017 have been revised.		
				Telephone: (+351) 213 507 900				
				E-mail: Graca.Louro@icnf.pt				
6.C		<b>SAWNWOOD, CONIFEROUS</b>						
		Production	1000 m <sup>3</sup>	1.054	817	948	1.100	1.100
		Imports	1000 m <sup>3</sup>	106	91	91	90	90
		Exports	1000 m <sup>3</sup>	279	280	280	290	290
		Apparent consumption	1000 m <sup>3</sup>	881	628	759	900	900
6.NC		<b>SAWNWOOD, NON-CONIFEROUS</b>						
		Production	1000 m <sup>3</sup>	31	31 R	35	40	40
		Imports	1000 m <sup>3</sup>	330 E	78 E	481	480	480
		Exports	1000 m <sup>3</sup>	30	45	45	48	30
		Apparent consumption	1000 m <sup>3</sup>	331	64	471	472	490
6.NC.T		<b>of which, tropical sawnwood</b>						
		Production	1000 m <sup>3</sup>	12	12 R	15	12	11
		Imports	1000 m <sup>3</sup>	34	39	39	31	30
		Exports	1000 m <sup>3</sup>	20	33	33	20	20
		Apparent consumption	1000 m <sup>3</sup>	26	18	21	23	21
7		<b>VENEER SHEETS</b>						
		Production	1000 m <sup>3</sup>	93 C	32 C	28	30	33
		Imports	1000 m <sup>3</sup>	25 C	26 C	26	25	26
		Exports	1000 m <sup>3</sup>	53 C	53 C	53	53	53
		Apparent consumption	1000 m <sup>3</sup>	64	5	1	2	6
7.NC.T		<b>of which, tropical veneer sheets</b>						
		Production	1000 m <sup>3</sup>	64 N	2 R	0	1	1
		Imports	1000 m <sup>3</sup>	5	7	6	5	4
		Exports	1000 m <sup>3</sup>	5	6	5	5	3
		Apparent consumption	1000 m <sup>3</sup>	63	3	1	1	2
8.1		<b>PLYWOOD</b>						
		Production	1000 m <sup>3</sup>	44 C	47 C	0	0	0
		Imports	1000 m <sup>3</sup>	80 C	91 C	91	90	90
		Exports	1000 m <sup>3</sup>	64 C	13 C	36	40	40
		Apparent consumption	1000 m <sup>3</sup>	61	126	55	50	50
8.1.NC.T		<b>of which, tropical plywood</b>						
		Production	1000 m <sup>3</sup>	0,165 N	2 R	0	0	0
		Imports	1000 m <sup>3</sup>	2	5	5	4	3
		Exports	1000 m <sup>3</sup>	1	1 R	3	1	1
		Apparent consumption	1000 m <sup>3</sup>	1	7	2	3	2
8.2		<b>PARTICLE BOARD (including OSB)</b>						
		Production	1000 m <sup>3</sup>	700	661	661	706	710
		Imports	1000 m <sup>3</sup>	261	499	499	300	250
		Exports	1000 m <sup>3</sup>	447	467	467	440	420
		Apparent consumption	1000 m <sup>3</sup>	514	693	693	566	540
8.2.1		<b>of which, OSB</b>						
		Production	1000 m <sup>3</sup>	0	0	0	0	0
		Imports	1000 m <sup>3</sup>	16	24	24	30	25
		Exports	1000 m <sup>3</sup>	0	0	0	0	0
		Apparent consumption	1000 m <sup>3</sup>	15	24	23	30	25
8.3		<b>FIBREBOARD</b>						
		Production	1000 m <sup>3</sup>	405 C	389 C	389	436	445
		Imports	1000 m <sup>3</sup>	409 C	315 C	535	523	485
		Exports	1000 m <sup>3</sup>	464 C	335 C	584	520	480
		Apparent consumption	1000 m <sup>3</sup>	350	369	340	440	450
8.3.1		<b>Hardboard</b>						
		Production	1000 m <sup>3</sup>	0	29	29	20	25
		Imports	1000 m <sup>3</sup>	149	40 E	230	220	210
		Exports	1000 m <sup>3</sup>	149 E	20 E	259	200	170
		Apparent consumption	1000 m <sup>3</sup>	0	49	0,1	40	65
8.3.2		<b>MDF/HDF (Medium density/high density)</b>						
		Production	1000 m <sup>3</sup>	405	360	360	416	420
		Imports	1000 m <sup>3</sup>	221	255	255	263	230
		Exports	1000 m <sup>3</sup>	276	281	281	280	270
		Apparent consumption	1000 m <sup>3</sup>	350	334	334	400	380
8.3.3		<b>Other fibreboard</b>						
		Production	1000 m <sup>3</sup>	0	0	0	0	0
		Imports	1000 m <sup>3</sup>	39	20 E	50	40	45
		Exports	1000 m <sup>3</sup>	38	34 E	44	40	40
		Apparent consumption	1000 m <sup>3</sup>	1	-13	6	0	5
9		<b>WOOD PULP</b>						
		Production	1000 m.t.	2.729 C	2.753 C	2.753	2.799	2.800
		Imports	1000 m.t.	154 C	173 C	173	171	160
		Exports	1000 m.t.	1.239 C	1.182 C	1.182	1.190	1.180
		Apparent consumption	1000 m.t.	1.645	1.744	1.744	1.780	1.780
12		<b>PAPER &amp; PAPERBOARD</b>						
		Production	1000 m.t.	2.097 C	2.095 C	2.095	2.096	2.100
		Imports	1000 m.t.	848 C	876 C	876	880	870
		Exports	1000 m.t.	1.917 C	1.918 C	1.918	1.930	1.970
		Apparent consumption	1000 m.t.	1.029	1.053	1.053	1.046	1.000
5.1		<b>WOOD PELLETS</b>						
		Production	1000 m.t.	606	689	710	720	720
		Imports	1000 m.t.	63	31	36	38	40
		Exports	1000 m.t.	470	488	513	520	520
		Apparent consumption	1000 m.t.	200	232	233	238	240